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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,162	06/26/2001	Eric B. Remer	42390P10196	5197

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EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT PAPER NUMBER

2195

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/894,162

Applicant(s)

REMER ET AL.

Examiner

Lewis A. Bullock, Jr.

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by YUE (U.S. Patent 5,987,492).

As to claim 11, YUE teaches a method comprising: allocating a plurality of processing slots (slots) on a processor based on a priority of multiple threads (assigning slots to processes that have threads) (col. 9, lines 65-67; col. 9, lines 2-10); assigning the multiple threads (threads) to the plurality of processing slots (available slots) (col. 9, lines 24-37); sending the multiple threads out for processing (via putting the threads on the dispatch queue) (col. 9, lines 49-54); and filling the plurality of processing slots with new threads (threads on the dispatch queue / thread at the head of ticket queue) (col. 9, lines 49-63; col. 10, lines 15-21).

3. Claims 1, 5, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by MONTPETIT (U.S. Patent 6,366,761).

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As to claim 1, MONTPETIT teaches a method of processing work units (data packets) from client systems (ground terminals / satellite systems) comprising: allocating a plurality of processing slots based on respective priorities of the respective client systems (allocation of bandwidth to the ground terminals to send priority packets) (fig. 11B, step 230 or 218; col. 5, line 57 – col. 6, line 32; col. 7, lines 23-48); assigning work units (data packets) to the plurality of processing slots (slots) (col. 7, lines 23-48; col. 14, lines 22-26) and sending the work units (work units) to the client systems for processing (col. 14, line 56 – col. 15, line 7).

As to claim 5, MONTPETIT teaches the work units (data packet) comprise network data packets (col. 7, lines 24-40).

As to claim 14, reference is made to a machine-readable medium that corresponds to the method of claim 1 and is therefore met by the rejection of claim 1 above.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4, 6, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over MONTPETIT (U.S. Patent 6,366,761).

As to claim 2, MONTPETIT teaches receiving a high priority of work unit (high priority data packet) from a first client (ground terminal); storing current work units of the first client; and processing the high priority work unit by assigning the high priority work unit to the plurality of processing slots (via preempting the lower priority bandwidth requests in the data packet for the higher priority bandwidth request) (col. 15, line 43 – col. 16, line 17; col. 16, line 46 – col. 17, line 14; col. 17, lines 23-30). MONTPETIT teaches storing the items in a send queue (col. 7, lines 24-40) and processing the data packets based on their priority (col. 16, lines 46- - col. 17, lines 14). MONTPETIT also teaches retaining bandwidth requests that were not satisfied but were in memory for further processing (col. 17, lines 23-30). However, MONTPETIT does not teach that the work unit is placed on a stack. Official Notice is taken in that it is well known in the art that stacks are memory structures for storing items, similar to queues. It would be obvious to one skilled in the art at the time of the invention to store the items, i.e. data packets, are stored on a stack or queue that implements last in, first out implementation, to determine the higher priority work unit (data packet) since a stack is a similar memory structure for storing items.

As to claim 3, MONTPETIT teaches allocating a predetermined number of processing slot to process high priority work units (via the bandwidth allocation request)

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(col. 15, line 43 – col. 16, line 17; col. 16, line 46 – col. 17, line 14; col. 17, lines 23-30; col. 13, line 42-52).

As to claim 4, MONTPETIT teaches the predetermined number of processing slots approximately corresponds to a predetermined portion of the plurality of processing slots (the processing slots are allocated as requested), and the plurality of processing slots varies based at least in part on availability of resources (processing slots are allocated based on availability and priority of data packet) (col. 15, lines 29 – col. 15, line 17; col. 13, line 42-52).

As to claim 6, MONTPETIT teaches allocating processing slots to receive work units, data packets, to be processed (col. 7, lines 23-48; col. 14, lines 22-26; col. 14, line 56 – col. 15, line 7) wherein the data packets have the same priority and stored data packets having a similar priority are executed first (col. 16, lines 46 – col. 17, line 14). However, MONTPETIT does not teach the reprioritizing of the message. It would be obvious that the message must be reprioritize since the plurality of work units, i.e. data packets, are transmitted together and having the same priority.

As to claims 15 and 16, reference is made to a machine-readable medium that corresponds to the method of claims 2 and 6 and is therefore met by the rejection of claims 2 and 6 above.

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6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over YUE (U.S. Patent 5,987,492).

As to claim 12, YUE teaches receiving a first thread (thread) having a high priority (high priority thread placed on ticket queue); pushing an older thread (placing thread back on ticket queue) (col. 9, lines 46-48) and allocating the first thread (high priority thread) to the plurality of processing slots (col. 10, lines 15-22; col. 9, lines 49-63). However, YUE does not teach that the thread is placed on a stack. Official Notice is taken in that it is well known in the art that stacks are memory structures for storing items. YUE teaches storing the items in a queue to determine the higher priority thread to execute from a currently executing thread. It would be obvious to one skilled in the art at the time of the invention to store the items are stored on a stack to determine the higher priority thread since a stack is a similar memory structure for storing items.

As to claim 13, YUE teaches popping the older thread (thread) when processing resources become available (an available processor slot and the thread has the highest priority) (col. 10, lines 15-22; col. 9, lines 49-63).

### ***Response to Arguments***

Applicant's arguments filed August 29, 2005 have been fully considered but they are not persuasive. Applicant argues that Yue does not teach the claimed step of "allocating a plurality of processing slots on a processor based on a priority of multiple threads" because Yue assigns slots based on the number of processors in the system

which is not equivalent to allocating slots based on the priority of the threads. The examiner disagrees. Yue teaches a scenario wherein if there are two processors in the system and a process has ten threads, only two threads of the process at a time can be input to the system dispatch queue, the rest of the threads will wait on a ticket queue (col. 10, lines 6-10). Yue also teaches that the priority of threads within a process are different (col. 9, lines 20-23) and used in schedule the execution of threads (col. 9, lines 55-68) and when a thread wants to use a processor, it first checks to determine whether there is an available processor slot and if there is and no other thread is waiting in the ticket queue, a priority is determined for the thread such that the thread is placed in the dispatch queue for execution (col. 9, lines 24-37). Therefore, Yue teaches the allocating of processor slots based upon a thread's priority since it considers a threads priority and the availability of a processor slot in order to allocate the processor slot to the higher priority thread for execution of the thread. Therefore, the examiner believes the reference adequately teaches the limitation as disclosed

Applicant argues that Montepetit does not teach the claimed step of "allocating a plurality of processing slots based on respective priorities of the respective client systems because Montpetit discloses priority levels to assist a network in providing quality of service classes and not the allocating of slots. The examiner disagrees. Montepetit teaches end users select a quality of service according to their needs and the data packets sent by the end users are assigned an appropriate priority status that enables the network to transmit the data packets in a manner that meets or exceeds the selected quality of service (col. 5, lines 57-60). Montepetit also teaches processing



slots are allocated based on the respective priorities (assigned priority status) (col. 6, lines 56-64) wherein the allocated slots are used to process the requests (via transmitting or transferring the request as requested). The claims do not indicate how the priority of the client systems is determined or obtained in order to allocate processing slots. Therefore one interpretation of the claims would allow the entering of the priority of the client system by the user as detailed in Montepetit in order to allocate processing slots. In conclusion, the examiner believes that Montepetit adequately teaches the allocating of slots based on priorities as indicated in the claims.

### ***Conclusion***

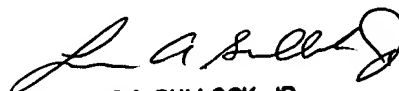
7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
LEWIS A. BULLOCK, JR.  
PRIMARY EXAMINER

November 21, 2005